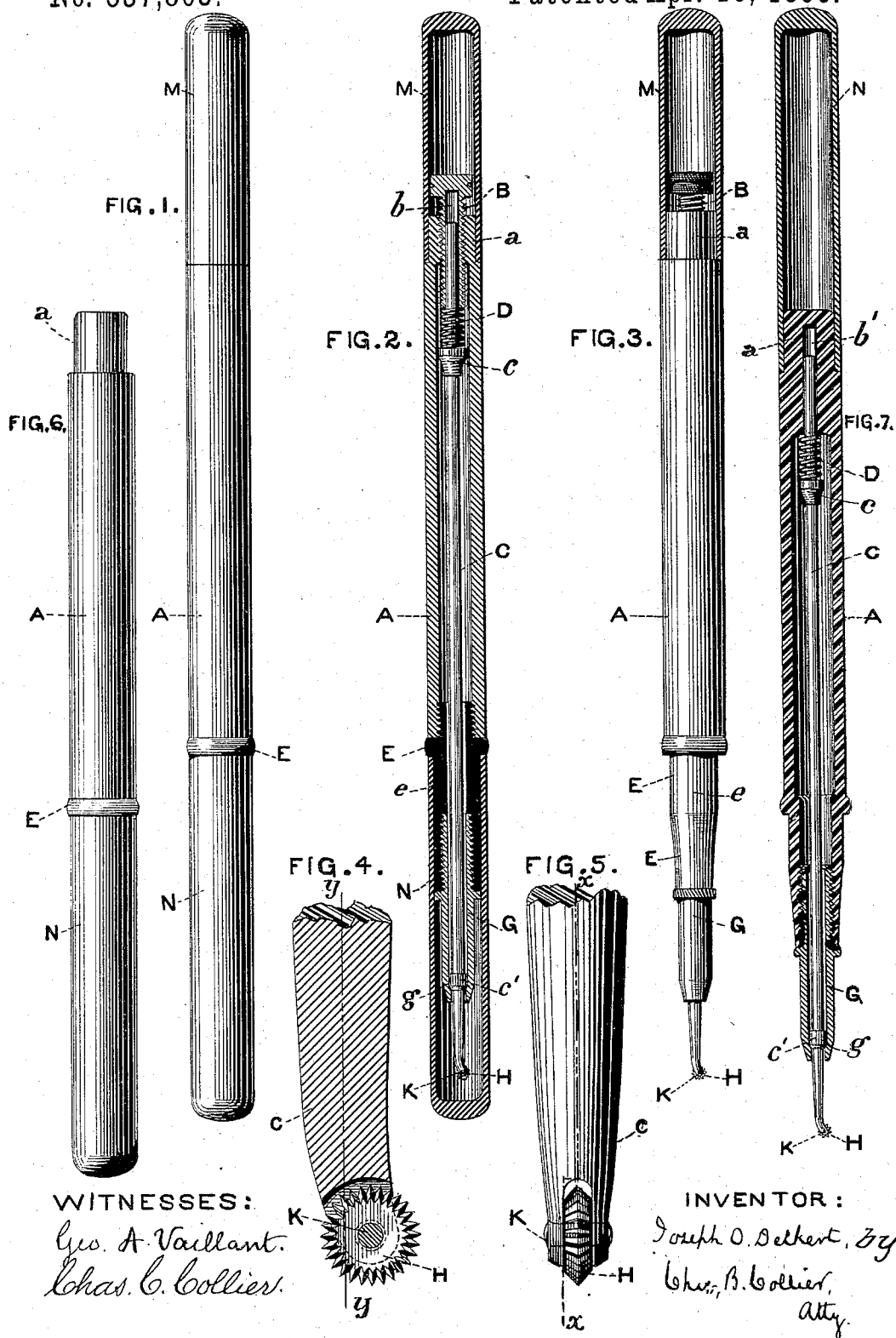


(No Model.)

J. O. DECKERT.
STENCIL MAKING PEN.

No. 537,803.

Patented Apr. 16, 1895.



UNITED STATES PATENT OFFICE.

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STENCIL-MAKING PEN.

SPECIFICATION forming part of Letters Patent No. 537,803, dated April 16, 1895.

Application filed October 15, 1894. Serial No. 525,853. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH O. DECKERT, a citizen of the United States, residing at the city of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Stencil-Making Pens, of which the following is a specification, reference being had to the accompanying drawings, forming part hereof.

My invention relates to that class of stencil-making pens in which the stencil is produced in a waxed sheet of paper, or other suitable material by means of a loose wheel, serrated on its periphery after the manner of a spur, said wheel being mounted on a shaft placed at, or adjacent to, the outer end of a spindle or shaft which constitutes the main body of the stylus or pen, and at an angle to the axis thereof.

Heretofore instruments of this character have been provided with a serrated wheel mounted upon an axle carried upon the point of the stylus, the stylus, or spindle, forming part of, or being rigidly secured to, the holder, or handle of the instrument, so that the serrated wheel while having capacity for free rotary motion upon its own axis is limited in its rotary movement to a plane at an angle thereto. The objectionable feature in such arrangement consists in the fact that in tracing lines of a curvilinear configuration, such as are required in ordinary use, it is impossible to form the loops and curvature of the top and bottom of most letters without involving a considerable movement of the arm and hand of the operator, or a rotary movement imparted to the body of the implement upon its longitudinal axis, or both combined. Other defects exist in implements heretofore constructed for this purpose which need not be pointed out. Suffice it to say that it has not been practicable to produce therewith stencils of the desired quality and free from defects.

The object of my invention is to provide a stencil-making pen of simple construction which obviates the defects hereinbefore pointed out and referred to, and one that enables the operator or user to produce a sten-

cil suitable for the production therefrom of copies which will be a fac simile and present all the characteristics of his ordinary chirography, and that too without any greater effort on his part than would be required in the production of the same writing with the ordinary pen and ink.

To this end my improvements consist:—first, in a stylus, or spindle, extending axially through the body of a holder or handle, and capable of rotating, axially, freely therein, and capable also of longitudinal movement therein, the same being held in place by an adjusting screw and spring at its near extremity and journaled in the nipple of the holder near its outer end, through which nipple it projects a suitable distance; second, in a serrated wheel mounted upon, or adjacent to, the point of the stylus or spindle, in such manner that the longitudinal axis of rotation of the wheel shall be at an angle, and lying in a plane parallel with, but at a slight distance from, the coincident longitudinal axis of the spindle or holder.

Referring to the drawings:—Figure 1 is an exterior view of the pen when not in use and protected so as to be adapted to be carried in the pocket, or for shipment. Fig. 2 is a central longitudinal section through the same. Fig. 3 is an exterior elevation showing the pen ready for use, the adjusting screw-protecting-cap being shown in section. Fig. 4 is a vertical broken section through line $x-x$ of Fig. 3. Fig. 5 is a front view, on an enlarged scale, of the outer end of the spindle and serrated wheel. Fig. 6 is an exterior view showing a modified form of my device, as closed. Fig. 7 is a longitudinal central section of same, the wheel protecting cap N being shown as placed in position when the instrument is in use.

Similar letters refer to similar parts in the various views.

A is a tubular piece, or holder, formed of hard rubber, or other suitable material, and is tapped internally at its upper end for the reception of a hollow adjusting screw B (Fig. 2). Within the cavity of this adjusting screw is inserted the upper extremity of the spindle or shaft of the stylus C, the same fitting

loosely therein. Interposed between the abutting end of the screw B and a collar *c* attached to, or forming part of the spindle of the stylus, is a spring D. The lower extremity of the holder A is tapped for the reception of the extension tube and guard piece E, which is also tapped internally for the reception of the terminal nipple G, said nipple having a conical seat and bearing near its point for the collar *c'* on the spindle C.

The resiliency of the spring D, which can be increased or decreased by the action of the adjusting screw B, increases or decreases correspondingly the friction of the two collars *c* and *c'*, one upon the spring and the other upon its seat, so that the proper degree of resistance to secure the best results, both as to the amount of friction and the longitudinal play of the spindle within the holder, may be perfectly regulated and secured. The extension tube or guard piece E prevents the stylus from falling out when the nipple G is removed for the purpose of being cleansed or other purpose.

The point of the spindle projecting from the nipple G is bifurcated or slotted to receive the serrated wheel H which rotates freely with, or upon, the shaft or axle K secured to the spindle, the longitudinal axis of the axle K falling outside the longitudinal axis *y-y* of the spindle, as shown in Fig. 4. This departure from the central axis is what induces the stylus to rotate on its longitudinal axis when in its employment a curvilinear movement is to be effected, as is exemplified in the action of the ordinary furniture caster.

Removable cap pieces M and N fit neatly upon the faces *a e* of the tubular holder A and extension piece E, and serve to protect the teeth of serrated wheel H, from injury, and the adjusting screw from disturbance while the device is being carried in the pocket or transferred.

The serrated wheel has the form presented by two truncated cones set base to base, the teeth cut on the periphery thereof being of four sided pyramidal form, as shown, the four faces meeting at a point at the top. The edges of the pyramids might, however, be rounded off so as to present conical vertices. The impressions made by the wheel, therefore, in the waxed paper are punctures, in the true sense of the word, which can be regulated in size according to the amount of pressure brought to bear upon the instrument.

The operation of the stencil-making pen is as follows:—The necessary amount of adjustment having previously been made, namely, the proper degree of resisting friction having been imparted to the spindle by means of the adjusting screw B and spring D, which is determined experimentally, the cap M being replaced as soon as this is determined, a sheet of waxed or otherwise suitably prepared paper, or tissue, is spread upon a smooth bed of suitable material and the pen being held in the ordinary manner the operator writes in

the manner as with the ordinary pen, the effect of shading of the letter being effected by the greater or less pressure applied to the pen as in pen and ink chirography. By reason of the combined movement of the serrated wheel upon its axle and the stylus spindle upon its longitudinal axis in a direction at right angles to that of the wheel the effect of a universal joint is obtained, and the pen is enabled to follow upon the prepared material every convolution imparted to it without any undue strain or effort on the part of the operator. After the letter or document has been stenciled in the prepared sheet copies thereof can be produced *ad libitum* in the ordinary manner.

In Figs. 6 and 7 is shown a modification of my improvement, consisting in dispensing with the adjusting screw shown in Fig. 2, the cylindrical pocket for the reception and guidance of the upper end of the spindle of the stylus being, according to such modification, formed in the upper part of the body of the holder, as shown in Fig. 7 at *b'*. The spring D being constructed, in the first place, of the proper degree of resiliency by the manufacturer, further adjusting of it, if found necessary, can be readily effected by means of the screw-nipple G or the introduction of washers, provided for that purpose, between the collar *c* and the spring D.

I do not claim broadly a pen for making stencils by means of a serrated wheel carried upon the point of a spindle or shaft forming part of the stylus, as such devices are well known to the art; neither do I claim broadly, a pen for making stencils in which the spindle, forming part of the stylus, is adapted to move longitudinally in its casing or holder, since in the "marking wheel" of Heidenhain, patented June 21, 1887, No. 365,129, exhibits a spindle carrying a wheel at its outer end the spindle of which is adapted to have outward longitudinal movement in its casing or holder; nor, on the other hand, do I confine myself to the particular form shown in the drawings, as I can dispense with the protecting caps M and N and can vary the particular form described of the serrated wheel.

Having now described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a pen for making stencils in waxed or other suitably prepared paper, or tissue, the central spindle or shaft C, slotted, or bifurcated, at its lower end, in combination with the serrated wheel H, said spindle, or shaft, being adapted to be freely rotated upon its central longitudinal axis, and also adapted to have a regulated inward longitudinal movement within its casing, substantially as described.

2. In a pen for making stencils the combination of the spindle or shaft, C, adapted for free axial rotation, and adapted to have a regulated inward longitudinal movement within its casing or holder with the serrated

wheel H, said wheel being adapted for rotation upon an axle at right angles to the axis of the spindle or shaft C, and slightly out of line with such axis, substantially as described.

5 3. In a pen for making stencils the combination of an outer casing, or holder, and a centrally located spindle, or shaft, carrying a serrated wheel rotating on an axle at an angle to, and out of line with, the longitudinal
10 axis of the spindle, said spindle or shaft, being adapted to be freely rotated within said casing, or holder, and also being adapted to have a regulated inward longitudinal movement within said holder substantially as described.
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4. In a pen for making stencils, the combination of an outer casing, or holder, a centrally located spindle, guided in said holder and adapted to have a regulated inward longitudinal movement therein and carrying at
20 its outer extremity a serrated wheel rotating on an axle at an angle to, and slightly out of line with, the longitudinal axis of said spindle, a reacting spring, and nipple G, provided with
25 a seat and bearing for the collar *c'* of the spindle, said nipple being secured to the holder, substantially as described.

5. In a pen for making stencils the combination of a holder, or casing, a centrally located freely rotating spindle, carrying a serrated wheel at its outer extremity, and pro-

vided with collars *c* and *c'* and a hollow adjusting screw B, and reacting spring D, said screw working in a thread tapped in said holder and forming a guide for said spindle, substantially as described. 35

6. In a pen for making stencils, the combination of an outer casing, or holder, a centrally located spindle carrying a serrated wheel located on an axle slightly out of line
40 with the axis of said spindle, a hollow adjusting thumb-screw, a spring D, and a nipple G, said nipple being provided with a seat and bearing for a collar *c'* on the spindle, said nipple being secured to a prolongation of the
45 casing, or holder, substantially as described.

7. In a pen for making stencils, the combination of a casing, or holder, a centrally located spindle adapted to be freely rotated in said holder and also to have a longitudinally
50 inward movement therein, a serrated wheel mounted at the outer end of said spindle, and means for regulating and controlling the longitudinal movement of said spindle in its holder, substantially as described. 55

In testimony whereof I have hereunto set my signature in the presence of two subscribing witnesses.

JOSEPH O. DECKERT.

Witnesses:

GEO. W. REED,
CHAS. C. COLLIER.